

# Amendments Made To Legislation Governing Waste Disposal From Pleasure Boats

To ensure greater compatibility between the regulations of Ontario and other jurisdictions and to clarify difficulties in interpretation, Ontario's regulations governing sewage disposal from pleasure boats have been amended.

Basically, the regulations — implemented last January — are continued and forbid the

discharge of raw sewage or the dumping of garbage from pleasure-craft.

The new regulations only require a holding-tank or a sewage treatment device when the boat is equipped with a head. Previously the regulations applied to all boats with sleeping accommodation. This will allow

boats used for short duration and racing such as sail boats to continue without toilet facilities.

Additionally, the amendments affirm that no permits for the use of macerator/chlorinator systems will be issued after September 15th, 1969. Permits for these devices continue to expire on

June 1, 1971.

All pleasure boats including house boats and charter cruisers, in Ontario waters are subject to the regulations, as well as those of out-of-province boaters cruising in Ontario waters. Visitors who are planning voyages of less than overnight duration may satisfy the Ontario require-

ments by agreeing not to use or permit the use of on board toilets that discharge or are capable of discharging untreated sewage into the water.

Responsibility for the administration and enforcement of Ontario's boating regulation continues under the Ontario Water Resources Commission.



*Splloosh!*

PUSHING OUT DEBRIS in its path, foam plug emerges from watermain in special trial at Windsor. The plug took about 15 minutes to pass through the 1,760 foot section of main.

## Record Number Attend Industrial Waste Conference

A record number of representatives from industries, educational institutions and governmental agencies gathered at Niagara Falls, Ontario, last month for the 16th Ontario Industrial Waste Conference.

During the three-day program some 14 papers ranging from consideration of the problems of industrial waste disposal from a fertilizer plant to an assessment of farm animal waste disposal problems in Ontario were considered and discussed. All papers were delivered by specialists in the field.

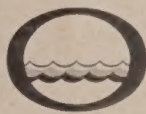
Indicating at the outset of the conference that the new minister of energy and resources management, George A. Kerr, was recommending that the 5% provincial sales tax on sewage treatment equipment be rescinded, Donald J. Collins, chairman of the Ontario Water Resources Commission, urged that industrial pollution problems be approached "reasonably and sensibly." He added that the Commission would take "other routes" with industries which refused to comply with its objectives.

The younger generation, Mr. Collins noted, was showing increasing intolerance towards pollution of all types.

One of the highlights of the conference, sponsored by OWRC, was a speech delivered by Rev. George Goth at a banquet attended by the majority of the 320 delegates. His topic — "We never had it so good" — stressed that, in spite of severe problems being encountered in this age, man is on the threshold of even greater success because of an unprecedented awareness of the defects in his society.



SPECIAL GUEST SPEAKER, Rev. George Goth of London, addresses delegates at evening banquet.



Water management in Ontario

# Watertalk

VOL. 2, NO. 4

JULY, 1969

## Unplugs By 'Plugging'

# Trial Conducted On New Method For Cleaning Watermains

The successful trial at Windsor of a new method for cleaning municipal watermains may revolutionize future approaches to this problem in Ontario communities.

The tests were conducted by the Windsor Utilities Commission, at the suggestion of A. B. Redekopp, Ontario Water Resources Commission water works supervisor.

The traditional method of cleaning watermains consists of 'flushing' operations — shooting water through the main at high velocity to dislodge material that has, over the years, collected on the inside of the main. Flushing operations are successful only to a limited extent, leaving the bulk of the deposit in the main unaffected.

The new technique, developed and initiated in England,

is both simple and inexpensive. With the aid of uncomplicated tools, a foam 'plug' is inserted into an isolated section of watermain through a fire hydrant. The plug is then forced through the section and out another hydrant

via pressure from a third hydrant. As it passes through the section, the plug (which has a slightly greater diameter than the main) executes a scouring action on the debris adhering to the watermain.

The tests conducted in Windsor indicated the technique is highly effective. A large amount of material was dislodged from the 1760-foot section of main in which the trial was conducted. After two of the foam swabs had been passed through the section, it was found that the flow capacity of the main was increased by at least 20 per cent.

It is anticipated that the new approach will be of great assistance in reducing consumer complaints arising from taste, odor and color nuisances in tapwater.

Additional demonstrations will be held at points throughout Ontario to familiarize public utility personnel with the technique.



Top photo: Some of the material dislodged from the main by the foam plug. Below: 'Scouring' operation is commenced by simple installation of plug into fire hydrant. A hose, attached to the hydrant, supplies water pressure to force plug through main.





## Watertalk

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### A Positive Ruthlessness . . .

The Industrial Wastes Conference, sponsored annually by the Ontario Water Resources Commission, might be thought of as a barometer — registering the attitude of industry toward pollution control and its effectiveness in coping with the problem.

This year's conference, although in many respects the most successful to date, indicated that there is by no means absolutely clear sailing ahead in curbing industrial pollution.

#### GIGANTIC STEPS

Even while paper after paper demonstrated that industry is taking gigantic steps toward the elimination of pollution, hard, ruthless questions from delegates in the audience often underlined shortcomings in pollution control programs and emphasized what yet must be done.

It was this incisive, totally objective criticism of industrial pollution abatement activities that, perhaps, struck the most positive note at the conference. For once such criticism was coming not from a governmental agency but from industrial representatives themselves.

Additionally, this year's conference showed that, more than ever, there is a concern on the part of industry toward the effects of pollution on nature and a general desire to attack the problem as effectively as possible.

#### SNOWBALLING INTEREST

The size of the conference alone — over 300 delegates attended — suggests that there is a snow-balling interest on the part of industry in employing up-to-date techniques for pollution abatement.

One of the speakers said that controlling pollution had posed a "monumental problem" to his plant.

The conference showed that there are, beyond a doubt, still many problems ahead. But, more importantly, it demonstrated irrefutably that many companies are sincerely and systematically seeking solutions.

## 'Farms Should Be Regarded As Industries' Industrial Waste Delegates Told

Farms should now be regarded as industries in so far as their wastewater problems are concerned, dele-

gates to the 16th Ontario Industrial Waste Conference, held recently in Niagara Falls, were told.

#### SPECIAL PAPER

In a specially prepared paper, Steve Black, a project engineer with the Ontario Water Resources Commission's division of research, noted that Ontario is presently experiencing "a drastic change in the methods of producing animals and poultry for slaughter and for food products." The confinement housing technique, he said, is the major factor in the creation of an immense waste disposal problem.

#### ANIMALS ENCLOSED

In the confinement method feed and water are brought to the animals which are kept in a small enclosed area rather than let out into an open farmyard.

Specialization of farm operations as well as the availability of commercial fertilizers, cheaper and more manageable than manure,

have also contributed to the disposal problem, Mr. Black pointed out.

A special complication, he added, stems from the fact that in Ontario there is an extensive winter period during which animal wastes cannot be successfully applied to the land, necessitating storage of the manure. Conventional methods of storage cause the production of very foul odors, he said, making spring application "very unpopular with the neighbors."

#### CAN ELIMINATE WASTE

Emphasizing that proper waste management practices can greatly reduce, if not eliminate, farm animal waste sources of water pollution, Mr. Black said that success lies in convincing farmers of the fertilizing value of the wastes and in implementing effective methods for managing the wastes, applying them to the farmland, and controlling odor during the storage period.



OWRC BIOLOGIST, Mike Michalski, explains OWRC investigations being conducted in the Muskokas to Alan P. Clark, president of the Muskoka Lakes Association.

## Nutrient Pollution Of Small Lakes Threatens Recreation

*Preoccupied with ensuring that their lakes remain free from bacterial pollution many cottagers overlook a form of pollution that, in the long run, may create much greater problems.*

Little Panache Lake is similar to many small lakes scattered throughout southern Ontario.

With a total area of 339 acres enclosed in a stoney shoreline it has been a popular spot for swimming and fishing. Over the years it has been increasingly developed until there is now an almost unbroken chain

of cottages and permanent homes along its perimeter.

In recent years, however, recreational uses of the lake have been seriously threatened by a phenomenon known as nutrient enrichment. Residents of the lake have complained that algae blooms, the result of nutrient pollution, have been occurring on the lake in unprecedented quantity.

#### FUEL FOR ALGAE

Studies conducted by the Ontario Water Resources Commission have indicated that pollution from the cottages and homes along the shore is virtually 'strangling' the lake. Nutrients — particularly from detergents in sink and laundry wastes — have gradually built up in the lake, providing a fuel for algal growth. The process, known as eutrophication, leads to the development of foul conditions and adversely affects aquatic life.

#### DIFFICULT TO COUNTERACT

Traditionally, cottagers think of pollution in terms of bacteria. Scientific consensus, though, is that the accelerated development of algae may be a far more serious threat in the long run, since it is so much more difficult to counteract.

The installation of efficiently functioning septic tanks, for instance, can be highly effective in curbing bacterial pollution of a lake. But, in many instances, septic tanks may not limit discharge to the extent necessary to combat nutrient pollution.

#### PHOSPHORUS CRITICAL

The OWRC pollution survey conducted at Little Panache demonstrates that the present concentration of phosphorus (an ingredient in detergents closely associated with the development of algae) in the lake water could have been contributed by an average discharge to the lake of only ten pounds of detergent per residence yearly since initial development commenced. Because such extremely small



OPERATIONS BASE for the Commission will be OWRC's mobile laboratory, located at Port Carling for the purpose of the study (above photo). Initial study consists mainly of sampling operations, as shown in photo at right, to aid in determining sources and quantity of nutrients.

quantities of phosphorus can have so critical an effect on the eutrophication process, OWRC is reassessing the value of the septic tank. Conditions such as shallow soil, over impervious bed-rock — common in many cottage regions in Ontario — may result in a dangerously high percentage of nutrient reaching the lake.

The Commission's study indicates, though, that the nutrient pollution process on Little Panache was speeded up by drains from sinks and baths which emptied directly on to the ground.

#### SPECIAL PROGRAM

To determine the limiting factors on algal development in recreational lakes and to establish what controls on discharges from all sources will be necessary, a special program, being conducted on the Muskokas and other small lakes, has been initiated.

OWRC scientific and technical staff feel that the program will be highly effective in providing data with which to combat the problem.

A search is also constantly being made for a positive method with which to treat lakes in which the eutrophication process is already advanced.

#### INTERIM METHOD

One interim method which might be adopted by cottagers to curb acceleration of the



nutrient process is to avoid the use of washing compounds containing phosphates. Most household liquid dishwashing products do not contain phosphates and so do not contribute to feeding algae. On the other hand, detergents used for washing clothes contain up to 50% phosphate. Thus, these detergents represent one of the major sources of nutrient pol-

lution. Since it is not necessary to use detergents for washing in soft water, cottagers can prevent needless pollution of soft water lakes in resort areas by using phosphate-free soaps.

To prevent pollution of recreational waters, in general, cottagers must take an active role in the surveillance of waste disposal practices in the area of their watershed.

## Great Lakes Paper: A Company On The Right Track To Solving Formidable Pollution Problems

Of all the industries in Ontario, none have been hit harder by pollution control problems than the pulp and paper companies.

Water is the life-blood of the pulp and paper industry. Huge quantities of it are used as a transport medium for processing the pulp as well as in washing and cooling operations. One of the problems the industry must face, then, is the purification of massive volumes of wastewaters from a multitude of sources.

Another characteristic of pulp and paper mills that poses an obstacle to pollution abatement programs is the age of most plants. Many paper mills were built 50 years ago or earlier with no thought given to pollution control. This generally means that the plant must be literally ripped apart in order to install facilities for the segregation and collection of different types of wastes. Industrial pollution control programs are most easily and inexpensively implemented when they can be incorporated into the initial design of a plant.

#### TECHNICAL PROBLEMS

Besides these problems of volume and age, characteristic of pulp and paper pollution abatement programs, mills implementing anti-pollution measures must also face the technical problems which inevitably accompany the development of any new waste treatment system.

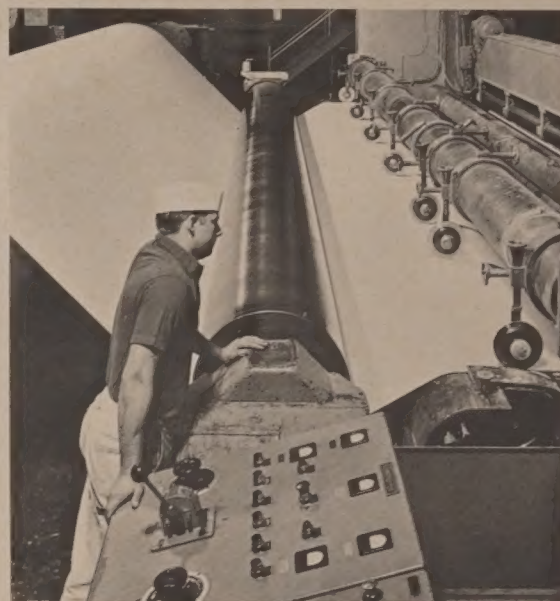
One company which has adopted a remarkably progressive program in spite of such difficulties is the Great Lakes Paper Company of Fort William, Ontario.

Basically, the company has four products: groundwood pulp, sulphite pulp, kraft pulp, and newsprint. The newsprint is manufactured by a process blending the groundwood, sulphite and kraft pulps.

Kraft pulp, which gives newsprint greater strength to meet the needs of modern, high speed presses, is produced in a separate mill which was constructed in 1967 complete with waste treatment facilities. Apparatus for fibre and bark removal from waste water, sludge concentration and pH adjustment of acid and alkaline wastes were included in the original designs for the plant. An underwater diffuser distributes the treated wastes across the Kaministiquia River.

#### COMPREHENSIVE PLAN

The plans of Great Lakes' management, however, go much further than curbing wastes from the new kraft plant. A second phase of the pollution program, scheduled for completion in 1970, will provide primary treatment for the company's entire pulp and paper processing operation. The cost of such a program is not cheap. By 1970 company officials estimate that capital expenditure alone will have climbed to \$7 million. Cost for the overall objective — secondary treatment of all waste-



A MAJOR PRODUCT of Great Lakes Paper Co. is newsprint. Huge volumes of water are used as a transport medium for processing the pulp.

waters — will spiral much higher.

One of Great Lakes' main assets in handling its pollution problem has been the concern which infiltrates its staff at all levels.

Frantz Tollefsen, a spokesman for the company, theorizes that this involvement may stem from the fact that virtually everyone working at Great Lakes, including the president, lives in the area.

"Most company heads," he says, "live in larger centers, far away from the pollution of their industry."

#### HIGHLY CENTRALIZED

Mr. Tollefsen also points out that, though Great Lakes has the largest Canadian mill east of the Rockies, it is more highly centralized than most industries, with all of its operations confined to the Lakehead. This, he says, makes it easier to come to grips with the pollution problem.

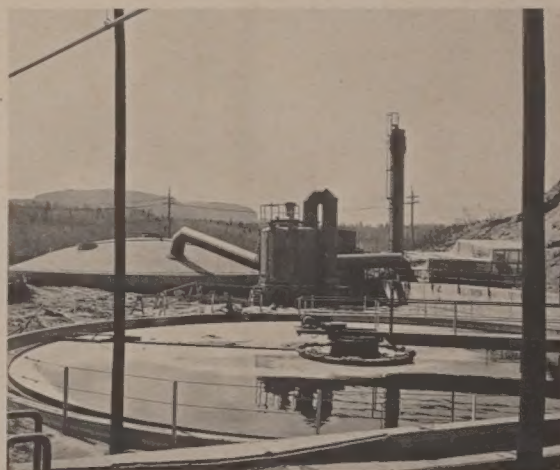
Probably the man most knowledgeable on the company's overall pollution control program is C. J. Carter, Great Lakes' vice-president of engi-

neering. The company's basic objective, he says, is "to minimize and control present pollution and obtain reliable data to aid in the design of future systems that will effectively decrease pollution as production increases."

#### MAJOR OBSTACLE

Mr. Carter says that a major obstacle older companies in developed areas must face when expanding waste treatment facilities is the acquisition of land. To overcome strains on industry posed by "exorbitant prices" he urges that the government expropriate land for industrial waste treatment purposes.

Though Mr. Carter emphasizes that management philosophy is "to make every effort possible to meet water quality objectives," he cautions that the public must be prepared to accept a certain amount of pollution. Otherwise, he concludes, industrial pollution abatement would involve "social and environmental problems with which people couldn't cope."



TWO MAIN FEATURES of the existing kraft mill effluent treatment plant at the Great Lakes Paper Company are the skimming and settling process shown in the foreground and the blending of the acid and alkali streams which takes place in the background structure. Both kraft and newsprint effluent systems have been developed in close co-operation with the Ontario Water Resources Commission.



STEVE BLACK

# Regional Offices Add 'Personal Touch' To OWRC Services

On May 29 a new regional office of the Ontario Water Resources Commission was officially opened at the Lakehead. This brings to a total of three the number of such branches operated by the Commission. Other regional offices are located at London and Kingston.

The regional offices are a relatively new development in the Commission's operational format. Manned by staff from the divisions of sanitary engineering and industrial wastes and equipped with extensive facilities, they are capable of dealing with most water problems. Staff from OWRC's division of laboratories also aid in analysis of samples and carry out special studies at the London and Lakehead offices.

## TWO ADVANTAGES

Regional offices have two distinct advantages over operations conducted from a Toronto base. First, the communications gap is bridged. OWRC staff living and working in a regional district can gain a broad knowledge of characteristics of the area and investigate special problem areas closely and continuously. Beside representing OWRC to the community, being part of the community themselves, district staff can represent the

community to OWRC head office in Toronto.

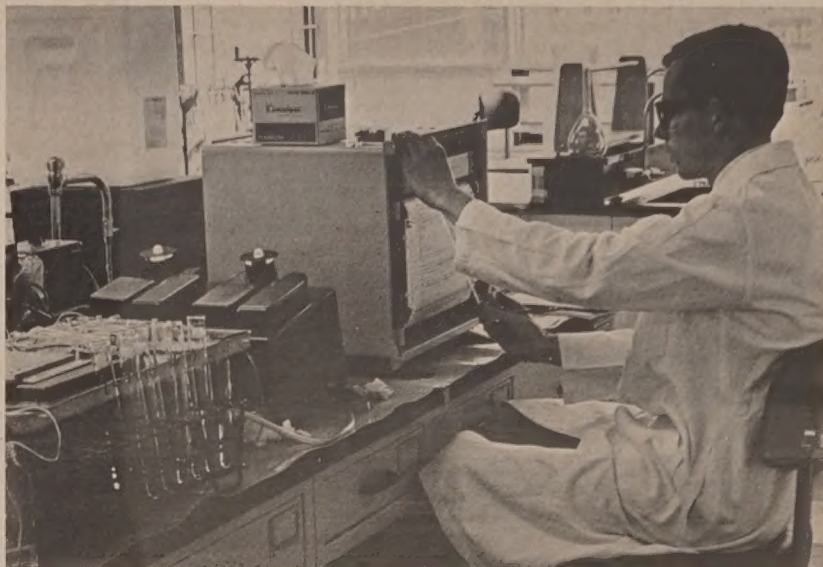
Another obvious advantage to the regional office system is that problems of an urgent nature can be handled immediately.

Jack Marsh, a district engineer at the Lakehead office, cites one example to show the superiority of the regional system:

Due to problems caused by winter conditions a tailings pond had overflowed at Zenmac Mines Ltd., near Schreiber (about 100 miles east of the Lakehead). Staff from the regional office promptly investigated the mishap and recommended remedial action which quickly solved the problem.

"This type of reaction would be impossible to achieve, working from only the Toronto offices," Marsh points out.

Similarly, the proximity of the Kingston office was of aid in averting a crisis in the small community of Rockland (near Ottawa) recently when the town's chlorinator broke down. Fearing a possible typhoid outbreak if the situation was allowed to continue, the Rockland Public Utilities Commission contacted OWRC district engineer Larry South at the Kingston office. South immediately contacted officials at Metro-Ottawa Water Works and



COMMISSION RESEARCHER keeps close watch on nutrient content of water samples in well-equipped laboratory at Lakehead regional office.

within hours they had connected a mobile chlorinator into the Rockland Water System. OWRC personnel were then able to give expert aid in implementing measures to get the system functioning correctly once again.

## AIDS IN DETECTION

London office administrator, John Moore, points out that the system will greatly aid in the combat and determination of sources of fish kills and oil spills. To back up

his claim he cites one instance in which a fish kill was reported at nine o'clock in the morning, investigated by ten, and the source pinpointed by noon.

Besides bringing a personal touch to water management, then, the regional offices have the effect of making that management more uniform throughout the province.

## Survey Activity On The Ottawa In High Gear For Duration Of Summer

With the coming of spring and summer months, full scale activity has, once again, commenced on the Ottawa River basin.

The survey work is part of a complex, joint study, initiated by the Ontario Water Resources Commission and the Quebec Water Board in 1967, to outline in detail a guide for water quality control in the basin. A summary

report will be issued in 1970.

Much of the recent work has consisted of velocity profile studies of the Rideau River — a major tributary in the basin — to aid in assessing waste water assimilation patterns.

The main bulk of effort in July, however, will centre on gathering data to define the waste water assimilation capacity of the reach on the

Ottawa River between Temiscaming and Desjoeachims. Part of this effort will involve a three-day period of heavy investigation of water quality characteristics in this area.

Throughout the summer, a monitoring program will continue to evaluate conditions along the entire river.

An interim report on the progress of the program will be released this summer.



SECTIONS OF THE RIDEAU RIVER were temporarily discolored with a harmless dye in this summer's investigations of the Ottawa River Basin. The dye aided in determining velocity characteristics of the river.



## News Round-up

- Location for the annual conference of the Canadian Institute On Pollution Control will be Montreal this year.

Plans developed for the technical program promise a large variety of interesting papers. Many sessions have been arranged to run concurrently in order to allow delegates to utilize their time most profitably. The conference will be held at the Queen Elizabeth Hotel from October 26 to October 29. Reservations should be made directly with the hotel.

- A final agreement for extensions to the sewage works system in the City of Cornwall at an estimated cost of \$1,001,195 was recently completed. The work is being financed as an OWRC/Municipal agreement, under which provincial funds, supplied through OWRC, will be repaid by the municipality on a long term basis.

Other recent developments, under the OWRC/Municipal plan, include the execution of final agreements for the construction of watermains in Brampton, at a cost of \$233,219, as well as the execution of preliminary agreements for the construction of storm sewers at Tweed and watermains in the township of Longlac. An extension to the sewage works at Coniston has been accepted by OWRC for development.

- Agreements finalized under the Provincial method of financing include two sewage works projects, totaling an estimated cost of over \$1.4 million. Under the Provincial plan municipalities pay for service on a use basis only. The projects call for provision of sewage service in the village of Cayuga and the town of Carleton Place.

The Commission has also approved the development of a Provincial sewage works program for the township of South Dumfries and has accepted an application from the village of St. Isidore de Prescott for development under the Provincial plan.

- A change has been effected in the name of one of the branches of OWRC's division of administrative services.

Effective immediately, the branch, which handles the Commission's purchasing, inventory, invoice verification and stores will be known as the supply branch. It was formerly known as the procurement branch.



### Grand Tour

RESOURCE REPRESENTATIVES from Pennsylvania were given a 'grand tour' under the direction of OWRC assistant general manager, Merrill Cathcart (shown standing) when they visited Toronto on a recent two-day junket. Purpose of the visit was to examine the workings of OWRC. Pennsylvania is considering setting up a similar commission. The visitors are shown enroute to the provincial parliament buildings where they were introduced to the minister of energy and resources management, George A. Kerr.



Water management in Ontario

# Watertalk

VOL. 2, NO. 4

JULY, 1969

★ SPECIAL FEATURES ★

## CIPC To Consider Formation Of Ontario Branch

An organization meeting for the purpose of discussing and taking the necessary action to form an Ontario branch of the Canadian Institute on Pollution Control will be held early this fall.

CIPC's membership consists of municipal representatives, public and industrial engineers and technologists, as well as

others interested in pollution control. Its objective, basically, is to aid in the combat of pollution by the interchange of knowledge.

The Institute based its decision to discuss formation of an Ontario branch on the replies from a questionnaire, distributed to Ontario members of the organization. The great ma-

jority of replies favoured formation of an Ontario branch.

The meeting will be held in Toronto on Friday, September 19 at the Constellation Hotel in Toronto. It will be open to all who are interested in the problems of environmental pollution in Ontario.

## Great Lakes Surveying Gives This Girl A Summer Job With A Difference

Irmegeard Steltner — call her 'Irmi' for short — has a summer job that many students would envy.

While most students are happy to land jobs in offices or factories, Irmi cruises the Great Lakes, aiding in assessing water quality conditions as part of an Ontario Water Resources Commission survey crew.

It is the Commission's policy to hire as many students as possible during summer months, both to foster interest among young people in anti-pollution work and because there is the need for extra personnel for summer operations. Still, it is unusual for a girl to be chosen to roam the Great Lakes in a survey vessel.

In Irmi's case, though, the choice isn't so unreasonable since she has had a long and happy association with boats. Her father is a naval engineer and architect and last summer she assisted him in a deep sea recovery mission off the coast of Newfoundland. She has been an avid sailor for most of her twenty years. Additionally, her interest in science — she is a second year geology student at Brock University and eventually wants to be an oceanographer — makes her a natural choice for a survey team.

The vessel to which Irmi was initially assigned was the Cato II, a 37 foot catamaran equipped with laboratory facilities for basic analyses and having a total crew of four. Cato, however, could not be called her 'permanent' summer address since the crew must occasionally transfer to other vessels.

Irmi's main job consists of performing chemical tests such as alkalinity and dissolved oxygen determina-

tion on water drawn up by the sampler at survey 'stations.'

The sampling and testing operations are usually very hectic periods for the survey crew. First, Captain Walter Fox carefully pinpoints the position of the boat, utilizing radar, sonar and land bearings to ensure that the boat is over the correct point for sampling. He then throws the vessel's engines into reverse, bringing it to a stop and spurring the survey crew into action.

Richard Schroeder, another student (Civil Engineering, Waterloo University) operates the winch which lowers and lifts the sampling equipment. As soon as a sample is collected Irmi quickly begins her tests.

OWRC technologist Doug

Kennedy makes the necessary observations at the site, maintains records and organizes the work at each sampling station. The crew carefully stores part of each sample for additional analysis at OWRC's main laboratory in Toronto.

It will be noted that, with the exception of Irmi, the crew is male. How do the others react to having a member of the gentler sex among them?

Perhaps the captain, Walter Fox, sums it up best. "It's alright," he says hesitantly, his features belying the sailor's classic distrust of the female. "For a while I wasn't too sure, but it's worked out pretty well."

And then he adds, almost wistfully: "It sure keeps the guys down on their talk."

Right: Irmi conducts on board chemical tests on water drawn up by sampler. Below: Cato 11 is secured for the night at one of many ports it will visit in summer survey season.





## Golfers Vie For Trophies At 11th Annual Tournament

One hundred and seventy-four golfers vied for over 70 prizes ranging from golf balls to barbecues at OWRC's 11th Annual Golf tournament held at the Aurora Highlands Golf Club last month.

The golfers consisted of 110 members of the OWRC staff with the remainder guests from many areas of the water pollution control field.

### Ka-Pow!

ARDENT GOLFER slugs his way out of sand at OWRC's 11th Annual Golf Tournament. This year over one hundred and seventy golfers competed for trophies. In top photo, program co-ordinators Kevin Lethbridge (far left) sanitary engineering, and Kim Shikaze, industrial wastes, are shown with low gross trophy winners Jim Blanchard (centre left), plant mechanic, Port Colborne WPCP, and Pat McNulty, Satellite Computer Communications Systems Ltd.

For the second year in a row Jim Blanchard, plant mechanic, Port Colborne WPCP, netted the top award for OWRC staff—the International Water Supply Co. Ltd. trophy—with a low gross of 84. A low net of 72, putted by Bill Hutz, Systems and EDP, won him the Canadian Johns Manville trophy.

The F. W. Langdon trophy, reserved for guests, was won by Pat McNulty, Satellite Computer Communications Systems Ltd., with a low gross of 80.

### MOST HONEST GOLFER

Nick Vanderkooy, putting a phenomenal low gross of 178, walked away with the special award for 'Most Honest Golfer.'

OWRC chairman D. J. Collins and general manager D. S. Caverly assisted in the presentation of winning trophies.

## Nature And Man

### A Deadly Love Affair

Psychologists and sociologists call it "role conflict". A person afflicted with such a malady is subject to conflicting pressures and strains. These strains often arise because different and inconsistent types of behaviour are required of the individual.

For example, a happily married man might be entranced into an ever-deepening relationship with an attractive mistress, yet still continue to love his wife. But the demands that result from such activity — the conflicting pressures — might put a severe strain upon his resources.

Modern man might be

said to be caught up in a similar paradox. In his case the deadly mistress is reckless technological expansion. While eagerly pursuing the comforts and benefits of industry, man has often introduced major hazards to his environment. A procession of technological "conquests" has jeopardized his relationship with nature.

And yet, today, more than ever before, there is an awareness that remedial measures must be undertaken to ensure the well-being of nature. The implementation of such measures, however, poses basic conflicts in a society based on profit economics. On the one hand,

modern man has been attracted to safeguard his environment but, on the other, he has been even more strongly attracted to increase his production and material wealth. What has resulted, generally, is a 'middle of the road' policy on the part of society toward pollution abatement.

If man is to retain what environmental quality there is left he must quickly alter his conception of priorities. He must re-establish his relationship with nature, making environmental safeguards of prime consideration.

Otherwise, like a woman jilted, nature may spurn man in return.

## Drawing By Grade Two Student Illustrates OWRC Book Cover

Sharon Howard, a seven-year-old grade two student at Sir John A. Macdonald Public School in Bay Ridges, Ontario, may well be the youngest book cover illustrator in Canada.

A drawing by Sharon was selected as the cover illustration for a new OWRC publication entitled 'My Water Book.' The book, designed to appeal to younger chil-

dren emphasizes the value and many uses of water. Sharon's drawing depicts a little girl with an umbrella walking towards her house through a heavy rainstorm. For her efforts, Sharon was presented with a set of books about Canada as well as a color reproduction of her drawing. The original drawing was framed and given to the school.



SHARON HOWARD, grade two student at Sir John A. Macdonald Public School, Bay Ridges, Ont., displays framed original of drawing with (l. to r.) science teacher, Mrs. A. Karagata, OWRC director of public relations, Murray F. Cheetham, and principal, Bruce D. Cornwall.

## New U.S. Desalination Plant Most Economical To Date

A new desalination plant installed at Siesta Key, Florida, may trigger the development of a number of such plants in other areas of the United States where abundant fresh water is unavailable.

The plant, claimed to be the largest and most economical in the U.S., will supply water at a total operating and maintenance cost of 18c per thousand gallons.

Raw water is not obtained from the sea by

the Siesta Key plant but from deep wells in the area which contain water of a high mineral content. Total dissolved solids in the well water is reduced from about 1,300 parts per million to less than 500 ppm by a process which uses electric current to push excess salts and minerals through special plastic membranes.

The plant is capable of supplying water at the rate of 1.2 million gallons per day.